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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/034,591      | 12/28/2001  | Xiao-Dong Yang       | 03226.101001;P5978  | 1697             |

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EXAMINER

WHITMORE, STACY

ART UNIT PAPER NUMBER

2812

DATE MAILED: 07/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/034,591

Applicant(s)

YANG, XIAO-DONG

Examiner

Stacy A Whitmore

Art Unit

2812

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### DETAILED ACTION

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed features of what a resistive degree is, and how the sorting node and time constants are effected must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### Claim Rejections - 35 USC § 112

2. Claims 1-24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

I. In claims 1, 9, and 17, the term resistive degree is used, however, there is no description of what a resistive degree is in the specification.

II. In claims, 1, 4, 9, 12, 17, and 20, the sorting of time constants and nodes is claimed, however, there is no description of how the time constants or nodes are sorted.

II. Claims 2-3, 5-8, 10-11, 13-16, 18-19, and 21-24 are also rejected by virtue of their dependence on a rejected independent claim.

#### Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 8-13, 16-21, and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Sheehan, Bernard et al., "TICER: Realizable reduction of extracted RC circuits".

4. As for claims 1, 9, and 17, Sheehan disclosed the invention as claimed, including a circuit reduction method, computer readable medium storing instruction for, and a computer system comprising a processor, memory, and instructions for:

inputting information about an original circuit structure [pg. 1, abstract; original circuit information is inherently input to the CAD system for ananalysis];

using a resistive degree of at least one node in the original circuit structure to selectively sort the at least one node [pg. 1, right hand side, especially classifying (sort) nodes as quick, slow, normal; pg. 2, section Quick Nodes; The reference is read by the examiner to disclose nodes that are selectively sorted using a resistive degree especially in view of equations 3.4 and 3.5 which use  $g_{in}$  and  $g_{jn}$  are used as part of the classifying (sorting) in which both the conductance reads as a resistive degree since conductance is a resistive degree; further on page 2, right hand side, "Interpreting each term in (3.4) and (3.5) as a resistor....above" indicates further that a resistive degree is used to sort nodes];

determining at least one time constant of the original circuit [pgs.1-2, Nodal time constants];

sorting the at least one time constant [pgs.1-2, Nodal time constants: time constants are sorted as less than, greater than or between the min and max]; and

determining whether to remove a loop in the original circuit structure based on the sorted at least one time constant and the sorted at least one node [pg. 2, Node elimination reads as removing a loop because if nodes are removed, a loop in the circuit is removed].

Art Unit: 2812

5. As for claims 2, 10, and 18, Sheehan further disclosed preprocessing the original circuit structure [pg. 1, right hand side, last two paragraphs, the classifying (sorting) of nodes reads as a preprocessing of the original circuit because it is done before other processing steps].

6. As for claims 3, 11, and 19, Sheehan further disclosed selectively choosing the at least one node as a node to be reduced [pg. 2, Node Elimination section, left hand side, second paragraph].

7. As for claims 4, 12, and 20, Sheehan further disclosed determining another time constant of the original circuit after the loop has been removed from the original circuit structure [pg. 4, Conclusion section, first and second paragraphs; see also as rejected in claims 1, 9, and 17: In the conclusion section, Sheehan discloses that the circuit reduction method is repetitive, which reads as a repetition of the process which has been rejected in claims 1, 9, and 17];

sorting the another time constant [pg. 4, Conclusion section, first and second paragraphs; see also as rejected in claims 1, 9, and 17: In the conclusion section, Sheehan discloses that the circuit reduction method is repetitive, which reads as a repetition of the process which has been rejected in claims 1, 9, and 17]; and

determining based whether to remove another loop in the original circuit structure based on the sorted another time constant and the sorted at least one node [pg. 4, Conclusion section, first and second paragraphs; see also as rejected in claims 1, 9, and 17: In the conclusion section, Sheehan discloses that the circuit reduction method is repetitive, which reads as a repetition of the process which has been rejected in claims 1, 9, and 17].

8. As for claims 5, 13, and 21, Sheehan further disclosed removing a loop that is not present in the original circuit structure but is present in an extraction of the original circuit structure [pg. 4, Conclusion section; and as cited in the rejection of claims 1, 9, and 17: the TICER program is disclosed by Sheehan to perform the same steps as

Art Unit: 2812

recited in the rejections of claims 1, 9, and 17 additionally with extraction tools, and therefore an extraction of the original circuit].

9. As for claims 8, 16, and 24, Sheehan further disclosed maintaining an Elmore time constant from directions around the at least one node [pg. 3, Section Preservation of Elmore delays],

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stacy A Whitmore whose telephone number is (703) 305-0565. The examiner can normally be reached on Monday-Thursday, alternate Friday 6:30am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Niebling can be reached on (703) 308-3325. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Stacy A Whitmore

Patent Examiner

Art Unit 2812

SAW

July 7, 2003

A handwritten signature in black ink, appearing to read "Stacy A. Whitmore", is written over the printed name and title.